EnSafe Environmental and Safety Designs, Inc.
901/372-7962

5724 SUMMER TREES DR. • P.O. BOX 341315 • MEMPHIS, TN 38184-1315

February 18, 1993

Mr. Russ Randle
Patton Boggs & Blow
2550 M. Street NW
Washington, DC 20037

Re: EnSafe's NPL Experience

The following information is submitted regarding EnSafe's experience at National Priorities List Sites as technical consultant performing RI/FS investigations.

EnSafe's NPL experience may confirmed by contacting Mr. Harold Taylor, Chief, KY/TN Superfund Unit, EPA Region IV at (404) 349-2234. If he is unavailable, confirmation may also be obtained from Ms. Beth Brown, Remedial Project Manager, EPA Region IV at the same number.

EnSafe is an experienced contractor and is managing the assessment, design and remediation of National Priority List (NPL) sites and RCRA Corrective Action sites throughout the United States. The figure in Attachment A illustrates the geographic diversity of those sites and includes more than 25 federal Superfund Sites. EnSafe has successfully executed all phases of remediation management, including site Work Plan development, RI/FS, Public Hearings, Records of Decisions, Remedial Design and oversight of remedial contractors. We are currently the supervising contractor for seven NPL Sites located in TN, KY, SC and RI. Attachment B lists EnSafe's experience on State and Federal NPL Sites.

EnSafe has 90 employees experienced in NPL Site investigations, including registered professional engineers and geologists, geophysicists, biologists, chemists, and environmental scientists. Project summaries are described on the following pages.

Tar Lake Site

EnSafe has served as consultant and site manager for the Tar Lake Site in Antrim County, Michigan since the site was NPL listed. This site is a 4-acre wood tar pit.

EnSafe conducted several remarkable investigation tasks, including the drilling of two shallow wells through Tar Lake. These wells required the construction of a "floating" roadbed onto the lake.

EnSafe also developed a novel groundwater monitoring approach to determine the vertical depth of the plume. Instead of expensive well nests, a technique was developed in which casings were "pulled" at five foot intervals and samples taken at each interval. The result was a "map" of the plume at multiple depths with the cost of only one well at each horizontal location.

Reference:

Mr. Jim Moran
Paramount Communications
New York, New York
212/373-8527

Stamina Mills RDRA

EnSafe serves as Supervising Contractor for Remedial Design and Remedial Action at the Stamina Mills NPL Site Smithfield, Rhode Island. EnSafe is implementing a Record of Decision (ROD) which requires (1) demolition of a partially burned textile mill and elimination of underground raceways; (2) sealing of the site to prevent infiltration of river water; (3) dredging of the river; (4) installation of a Soil Vapor Extraction System for removal of TCE from fractured rock formations; and (5) design and implementation of a groundwater pump and treat system to remove TCE from a public use aquifer. EnSafe also monitors adjacent public and private water supplies and provides coordination with community leaders.

Tasks 1 and 2 are complete. Remaining tasks are in progress.

References:

Mr. Jim Boggs
Kayser Roth Corporation
P.O. Box 999
Southfield, MI
313/355-8272

Mr. Neil Handler
EPA Region I, RPM
JFK Federal Bldg.
Boston, MA
617/573-9636

Ft. Hartford Mine

One of the unique characteristics of the Ft. Hartford Mine Site is the physical hazard associated with the partially destroyed structures. The site is an abandoned limestone mine, approximately one mile deep, into which more than 3 million tons of water reactive salt cake fines were disposed. The mine is not stable and leaks water causing the salt cake fines to release ammonia and other gases.

EnSafe is the Supervising Contractor for the Emergency Response Action Plan under which the mine surface is being re-engineered to fill sinkholes, provide for rapid drainage, and prevent further water entry. In addition, EnSafe has designed and implemented a program to pump millions of gallons of water out of the mine and discharge the water to local rivers.

Physical hazards include: toxic gas exposure in the confined spaces of the mine, roof and wall collapse due to fracturing, and stress associated with RI/FS activities in a mine.

EnSafe has been on this site for three years working under a stringent EnSafe-authored Health and Safety Plan without incident.

The site is also the location of a unique air monitoring system designed by EnSafe to provide remote toxic gas monitoring data at various "breakthroughs" which is transmitted back to a monitoring station and downloaded into computers in Memphis. This real time remote monitoring system has saved thousands of dollars when compared to the alternative - labor and travel intensive discrete sampling.

EnSafe has also prepared the RI/FS workplans for the Ft. Hartford site. They include biological assessments for bats and mussels; intensive transport modeling of groundwater flow in fractured karst terrain; complex chemical assessments of water-reactive wastes (involving major revisions to the CLP protocols); and mine safety studies to determine the long-term feasibility of using the mine as a disposal site. A site office with four dedicated employees has been installed on the property to minimize travel costs and provide for close monitoring of site conditions.

Reference:

Mr. Waheed Khan, Environmental Manager
Barmet Aluminum
Akron, Ohio
216/753-7701

Fairfax Site

EnSafe is conducting an RI/FS on this 20-acre former pesticide formulation facility for EPA Region IV. The site includes abandoned formulation buildings, an on-site landfill, and is adjacent to a municipal wellfield.

Contaminants include toxaphene, DDT, lindane and other BHC isomers, arsenic, and chlorobenzilate. The Site RI/FS has been submitted. The FS includes a novel, innovative treatment technology for dealing with contaminated soils.

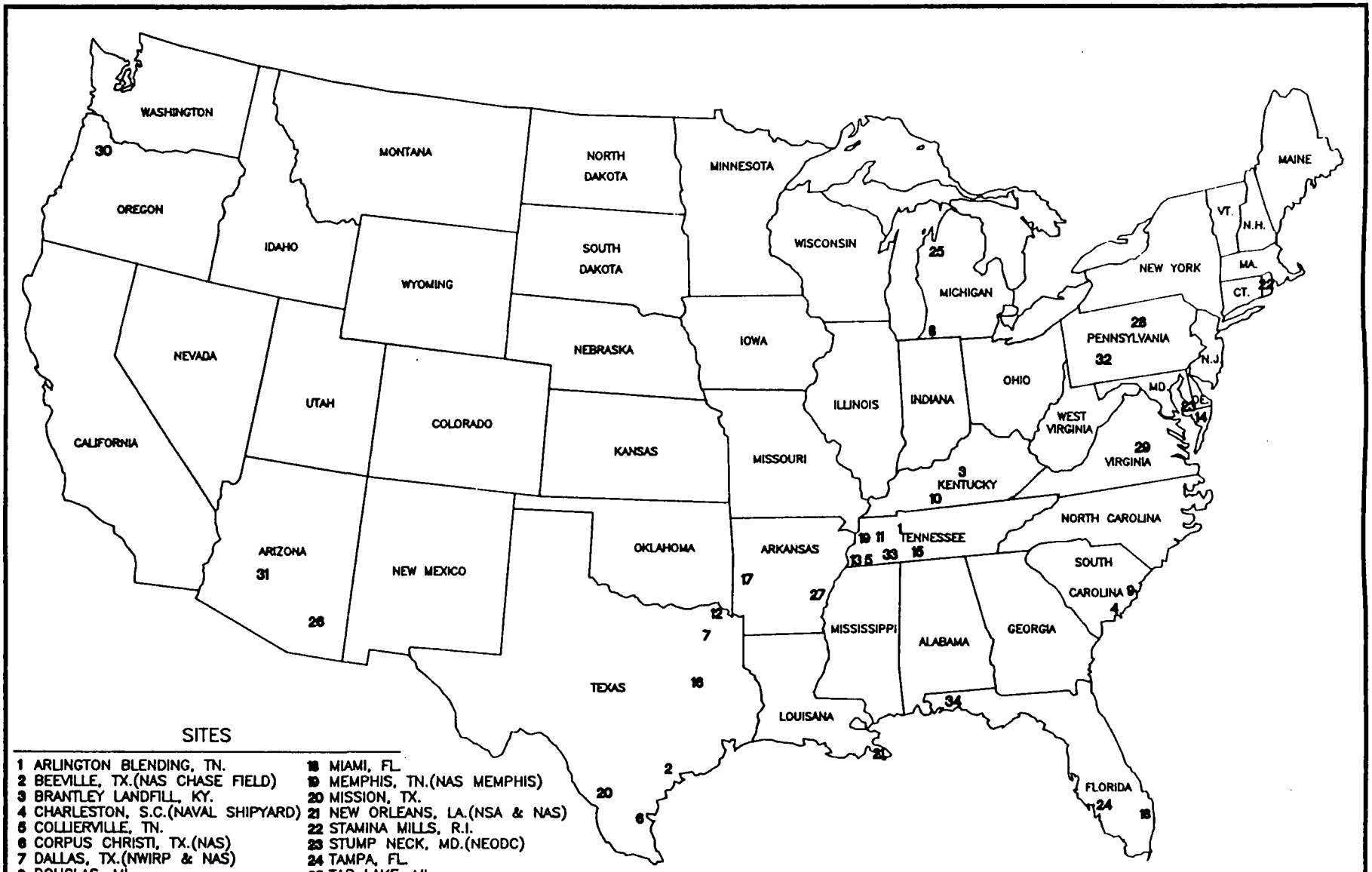
Reference:

Mr. Bobby Pace
Helena Chemical Company
Memphis, TN
(901) 761-0050

I hope the above information is helpful to you. Please contact me if additional information is needed.

Sincerely,

Phillip G. Coop, CHMM
President



SITES

1 ARLINGTON BLENDING, TN.
2 BEEVILLE, TX.(NAS CHASE FIELD)
3 BRANTLEY LANDFILL, KY.
4 CHARLESTON, S.C.(NAVAL SHIPYARD)
5 COLLIERVILLE, TN.
6 CORPUS CHRISTI, TX.(NAS)
7 DALLAS, TX.(NWIRP & NAS)
8 DOUGLAS, MI.
9 FAIRFAX, S.C.
10 FT. HARTFORD, KY.
11 GALLOWAY PITS, TN.
12 GRAND PRAIRIE, TX.
13 HOLLYWOOD DUMP, TN.
14 INDIAN HEAD, MD.(NOS)
15 JACKSON, TN.
16 McGREGOR, TX.
17 MENA, AR.
18 MIAMI, FL.
19 MEMPHIS, TN.(NAS MEMPHIS)
20 MISSION, TX.
21 NEW ORLEANS, LA.(NSA & NAS)
22 STAMINA MILLS, R.I.
23 STUMP NECK, MD.(NEODC)
24 TAMPA, FL.
25 TAR LAKE, MI.
26 TUCSON, AZ.
27 WEST HELENA, AR.
28 MUNCY, PA.
29 CREWE, VA.
30 TUALATIN, OR.
31 PHOENIX, AZ.
32 HARRISBURG, PA.
33 TOONE, TN.
34 PENSACOLA, FL.(NAS)

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FIGURE 1
HAZARDOUS WASTE CLEANUP SITES,
NPL SITES, CERCLA 106 SITES,
RCRA RFI SITES AND
VOLUNTARY CLEANUP SITES

DWG DATE: 10/09/92 | DWG NAME: USA1

LEGEND

★ – SITE LOCATION

VI – EPA REGION

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FIGURE 2
HAZARDOUS WASTE CLEANUP SITES,
NPL SITES, CERCLA 106 SITES,
RCRA RFI SITES AND
VOLUNTARY CLEANUP SITES
IN EPA REGIONS

DWG DATE: 10/14/92 | DWG NAME: USA2

PHILLIP G. COOP, CHMM
PRESIDENT

Education: A.B., History and Science, Magna Cum Laude, Harvard University/1970

Certifications: Certified Hazardous Materials Manager, Masters Level

Experience:

- Mr. Coop has managed EnSafe's major RI/FS projects for several major corporations. He is the project manager for the Tar Lake RI/FS and the Carrier Site RI/FS (see case studies). These and other similar projects require close coordination amount th PRP, state and federal agencies, and multiple subcontractors. He has developed work plans, quality assurance plans, and health and safety plans for many sites. Mr. Coop is also a principal officer in Environmental and Safety Designs, Inc. (EnSafe) and coordinates technical and scientific efforts on behalf of the firm.

- Mr. Coop is also a compliance specialist, advising the Company's clients with regard to RCRA, CERCLA, and Clean Water Act compliance problems. In that capacity he frequently works closely with state and federal personnel to interpret regulations applicable to specific situations.

- He is EnSafe's project manager for a major hazardous waste investigation currently under way for the United States Navy. Fourteen Navy installations are being surveyed for RCRA compliance and for each specific hazardous waste management plans are being developed. Tasks include PCB audits, Part B permit preparation, and hazardous materials surveys as well as hazardous waste investigations.

- He is currently developing site investigation and mitigation plans for several pesticide-containing landfills. These projects require close coordination with state and federal authorities, and preparation of technical documents in support of proposed site mitigation plans.

- Mr. Coop has conducted hazardous material and waste transportation training seminars for a variety of industrial facilities involving multi-modal transportation of a variety of hazard classes.

- He has conducted Risk Assessments on several major sites, most recently on the Tar Lake Site, an NPL Site for which risk assessment required novel approaches due to the esoteric contaminants involved.

- Mr. Coop has been project manager for or participated in numerous environmental impact statement programs. These include: a program to evaluate the impact of dredging operations in Arkansas streams, a study to determine the source of suspected solids problems in the hydrologically complex Catahoula/Saline Lake basins of central Louisiana, and the feasibility of revegetating strip mine land in southern Indiana.

CRAIG ALAN WISE
CHEMICAL ENGINEER

Education: B.S. Chemical Engineering, Purdue University/1981

Experience:

- Managed design, specification and bids preparation, and installation of groundwater remediation system (for trichloroethene and perchloroethene) within an operating process plant.

- Designed and managed implementation of air toxics emission characterization, and site meteorology in support of RI/FS at two NPL sites. Implemented program for collection and management of air and surface water quality data.

- Prepared hazardous waste management specifications and the government cost estimate for Navy base operating contracts for Gulf Coast Strategic Homeporting sites. Prepared Hazardous Waste Management Plans for base and ship generated wastes at these bases to assure compliance with RCRA generator standards.

- Negotiated air compliance permitting for major industrial source of volatile organics emissions. Managed stack testing and performed feasibility study of collection and recovery of fugitive volatile emissions for manufacturing plant.

- Quality Assurance Officer for several remedial investigations involving NPL sites. Prepared Quality Assurance Project Plans for the investigations.

- Managed a $2.2 million project to empty, decontaminate, and demolish a silo and bins containing thorium oxides at the Department of Energy Feed Materials Production Center in Fernald, Ohio. Prepared Operational Safety Requirements, Quality Assurance Plan, and conceptual design documents for the removal project to comply with EPA Region V, and OHEPA orders.

- Managed a contract to dispose of greater than Class C transuranic waste (Plutonium, and Americium) at a Department of Energy (USDOE) repository from the decommissioning of a source fabrication facility.

- Developed approach for, and supervised safe removal of a 50,000 gallon, carbon disulfide underground storage tank.

- Developed contaminated asbestos removal procedures for the Shipping port decommissioning project for the USDOE.

- Supervised shift cleaning and radioactive waste processing operations at the Dresden-1 primary system chemical decontamination, the first full system cleaning of a domestic commercial reactor. Also managed the technical reporting effort for this project.

- Developed design modifications, start-up, operation, and maintenance procedures, and supervised start-up at the Dresden-1 cleaning radioactive waste facility.

- As Process Engineer at Harshaw Chemical Company, started, optimized, and was the troubleshooter for catalyst manufacturing processes under the plant technical staff manager.

PAUL V. STODDARD, C.P.G.
VICE PRESIDENT, GEOLOGICAL SERVICES

Education: M.S., Geology, Memphis State University/1983
B.S., Geology, Memphis State University/1982
B.S., Biology, Memphis State University/1980

Certification: Certified Professional Geologist

Experience:

- Generated stratigraphic correlations of upper Cretaceous and Tertiary trends of South Texas with concentration in the Wilcox and Frio formations. Responsible for regional correlations of E-logs, preparation of stratigraphic cross sections, development and updating of structure maps, and well spotting and digitizing.

- Conducted remedial site investigations at facilities for sites with potential soil and/or groundwater contamination involving chlorinated hydrocarbons and petroleum products. Field assessments included in-situ monitoring of organic vapors utilizing an organic vapor detector and/or a scanning infrared spectrophotometer.

- Responsible for the design and implementation of "preconveyance" investigations to determine potential soil contamination at various sites being considered for commercial development.

- Field supervision and implementation of closure plans for hazardous waste facilities at Charleston, SC Naval Shipyard. Tasks included removal of hazardous waste inventories, decontamination of tanks, confirmation sampling of decontamination solutions and soil sampling at container storage compounds operated by the Shipyard and Defense Reutilization and Marketing Office.

- Conducted a study of pesticide contamination in groundwater at an industrial facility in Missouri. Field Investigation included soil boring, monitoring well installation, determination of hydraulic gradients, data reduction and analyses, and report generation.

- Implemented groundwater investigation for photosensitive hazardous substance contamination at NPL site.

- Field supervision and implementation of closure plans for removal of underground waste oil storage tanks and investigation of potential contamination in soils and groundwater from tank releases.

- Field supervision and implementation of sampling plan for hazardous waste facilities at NAS Memphis. Task included Level B inspection of former waste plating treatment storm sewer, and the sampling of soils associated with defective joints. The task also included the sampling of a former salvage yard for petroleum hydrocarbons and lead.

- Field supervision and implementation of underground storage tank removal investigations. Field assessments include soil sampling and/or monitoring well installation with groundwater sampling and assessment of hydrogeologic conditions.

- Project geologist for interior survey of 120 acre underground room and pillar mine. Additional tasks included surface investigation of karst features, monitoring well installation, interpretation of borehole geophysics, and subsequent groundwater sampling and data reduction.

- Project geologist for hydrogeologic assessment of RCRA facilities. Tasks include site selection and installation of groundwater monitoring networks, slug tests, and subsequent data evaluation.

- Project geologist for MCAS Cherry Point, RFI. Tasks included design and implementation of Field Sampling Plan, including soil borings, monitoring well installation, groundwater sampling, slug tests, hydrogeologic characterization -- including diurnal and tidal influences on the shallow aquifer and subsequent data reduction and report generation.

- Project manager for CERCLA Remedial Investigation/Feasibility Study for a former pesticide manufacturing facility. Tasks included the design and implementation of geologic/hydrogeologic assessment for volatile organic and pesticide contamination, subsequent data reduction, and report generation. Project management included cost tracking, scheduling, and continued regulatory compliance (i.e. Administrative Order).

- Supervised and directed remedial investigations (RI) per CERCLA requirements at multiple NPL sites, Region 3, Region 4, Region 5 and Region 6. Investigations included, but were not limited to, soil analyses, monitor and recovery well installation, sampling and analyses of groundwater, aquifer tests, borehole geophysics, surface geophysics and data interpretation, including preparation and presentation of assessment reports.